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The effects of instruction in polysemantic words at the sixth-grade level are investigated. The most efficient means of teaching these words, the factors which affect such teaching, and the effectiveness of large group instruction versus small group instruction are studied. Four hundred and twenty-seven sixth-grade students from lower-, middle-, and upper-socioeconomic areas served as the sample. Three methods of instruction utilized include large group instruction using transparencies, large group instruction with transparencies and every-pupil response cards, and small group instruction using self-directing, self-correcting worksheets. Analysis of variance was utilized to determine whether the gains made reflected the influence of intelligence, reading ability, or the treatment employed. The study concluded that the ability to learn multiple-meaning conceptualization appears not to be dependent upon socioeconomic factors. Additional results are briefly discussed, and a summary table of indicative trends is included. (RT)

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# Multiple Meaning of Words--Intermediate

## a Comparison of Three Teaching Techniques

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We are living in an age which has aptly been called one of a "word explosion." With the factors of semantic implication in operation, words are formulated with such rapidity, and new meanings are attached to old words, that it becomes almost impossible to locate words which have single, invarient meanings.

It is accepted that mere name calling of word lists is ineffectual and provides little if any of the essence of reading which is gaining meaning from the printed word. Clearly related to this is the child's ability to conceptualize. A child's vocabulary may be extensive in that he knows many different words, or intensive in that he knows a great deal about each word, or both. Each time a reader faces a new piece of material he must cope with a tremendous sorting task. That is, he must choose

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from his background of experience that meaning which accurately explicates the situation. In order to function efficiently today a child must establish a many-meaning background. Understanding several meanings and shades of meaning help the child to widen precise understanding of a polysemantic word. Children must be directed away from the one, true meaning syndrome and recognize that language is fluid. The factor of quality in the child's vocabulary and his ability to use his store of meanings are probably just as important as the total size of his vocabulary.

So many of our words have multiple meanings which are dissimilar that we need to check frequently to ascertain that the correct meaning is understood by the child. It would appear that authorities are in agreement concerning the necessity of developing sensitivity toward words which have multiple meanings. Because it is possible for a writer to establish one meaning, and for a reader to select a different meaning from the one intended, the effects of semantic confusion is manifested. Making the transition from the recognition of word symbols to the meaning behind the symbols is a key factor in the reacting process. The material cannot be interpreted unless the words have meaning for the child. Thus, each individual needs his own reservoir of meaning from which he can rapidly draw the precise nuance for the situation at hand.

A good reader, therefore, must be capable of accurate word recognition, but even more, he must know the many meanings of individual words. This sort of meaning becomes basic to his reading achievement. With the constantly changing time, it is

unlikely that we be able to isolate all meanings for every word. However, it does appear that children would respond positively to definite instruction in polysemantic words. Skill in the utilization of such words has been prescribed as essential in developing reading power.

It was the purpose then of this study to determine 1) if children could specifically be taught a given number of words and the multiple meanings associated with each, 2) the most efficient means of teaching such words, 3) the factors, if any, which would affect such learning, and 4) the effectiveness and efficiency of large group instruction versus small group instruction with paired practice.

The lessons were designed to be utilized at grade six level. One hundred-twenty words were selected from a list graded by Berwick[1] representing a vocabulary range from grades four to eight. Each word selected possessed a minimum of five meanings. It was planned to present at least three of the meanings per word, thus expanding the conceptualization to three hundred-sixty meanings. At all times, the use of the dictionary was encouraged to further increase the child's storehouse of meaning. Twenty lessons were developed which would encompass approximately twenty minutes teaching time per lesson. Six new words were introduced with each lesson and review provided within each lesson. The lessons by design were not cumulative in nature nor was there marked difficulty among these lessons.

The vocabulary was presented by three methods. These methods

subsequently became the three treatments.

Treatment A was a large group by design. This group utilized lessons presented on transparencies with the use of the overhead projector. These were teacher directed with the children offering the correct responses. They were immediately corrected by removal of block-out cards which covered the answers.

Treatment B was also a large group. This group utilized the same transparencies as Treatment A. Each child was also equipped with a set of every-pupil response cards. These were also teacher directed lessons, but each child would hold up the card displaying the response he felt to be correct. Accuracy of the response was determined as previously described.

Treatment C was structured as a small group. The children worked in pairs using self-directing, self-correcting worksheets. These worksheets contained the same material as presented on the transparencies. The teacher with the group served as a consultant.

The schools participating in the study represented a lower socio-economic industrial city referred to as Community 1, and an upper middle class residential town called Community 2. Two schools in each community were utilized as they met the criteria of having four classes at the sixth grade level within each school. The students and teachers were randomly assigned to one of the three treatments within each school. A total of four hundred twenty-seven children and sixteen teachers participated.

Prior to the study, the children were administered: Otis Quick Scoring Test of Mental Abilities, Form A; Stanford Achievement Reading Test, Intermediate II, Form W; Berwick Test of Multiple Meaning Words, Form A.

The Berwick Test yielded sub-test scores in the area of Word Recognition, Word Identification, Context and Total Scores. These sub-tests were treated as four variables in determining the differentials in learning that could be due to the effects of intelligence level or reading achievement levels within the three treatments.

Analysis of variance was utilized to determine if the gains made reflected the influence of the treatment employed, or is such learning affected by levels of intelligence or levels of reading ability measrured in terms of word meaning and paragraph meaning.

Due to the nature of the schools in the study, it was decided to treat the data from each community separately. In order to study the effects of the differences in levels of intelligence and knowledge of Word Meaning and Paragraph Meaning the scores in each of these three areas were placed in thirds. The thirds represented the upper, middle and lower portions of the total population of each community. The number of thirds could vary depending upon the factor in consideration. Each third was then analyzed in relation to a variable on the Berwick Test of Multiple Meaning Vocabulary.

The null hypothesis extended was that there would be no significant difference in the result of methods in presenting multiple meaning information. This hypothesis was found to be valid.

Analysis of Variance Findings:

1. When comparing I.Q. and reading ability scores to the four variable of Recognition, Identification, Context, and Total score, there was no significance in relation to the treatment employed.
2. The level of intelligence was found to be significant in relation to performance on the total Berwick Test as well as the sub-tests. In Community 1, significance occurred in the relation of upper to lower third. In Community 2, significance was found in the relation of upper to middle, and upper to lower I.Q. third.
3. To level of Word Meaning was found to be significant in relation to performance on the total Berwick Test as well as the sub-tests. In Community 1, significance occurred in the relation of upper to lower.third. In Community 2 significance was equally distributed among upper to middle third, upper to lower third, and middle to lower third.
4. The level of Paragraph Meaning was found to be significant in relation to performance on the total Berwick Test was well as on the sub tests. In Community 1, significance occurred between the upper and lower third. In Community 2 significance appeared in the relation of upper to lower third.

5. When considering the combined results of the pre-, post- and sleeper tests as a single factor, the relationship of each of the scores to each variable on the Berwick Test was found to be significant. Significance in Community 1 appears to be inthe relation of pre-to post-test. In Community 2 the relationship of pre- to post-test, and post-test to sleeper test appears to be equally significant.

Although not statistically significant, certain treatments had better success than others within a given situation.

1. In considering the total population of Community 1 (divided into upper, middle and lower thirds)
   a. The upper third was found to have more success with Treatment A.
   b. The middle third with Treatment B.
   c. The lower third with Treatment C.
2. In considering the total population of Community 2 (divided into upper, middle and lower thirds)
   a. The upper third achieved best in Treatment C.
   b. The middle third in Treatment C.
   c. The lower third in Treatment C.
3. In both communities, when considering the amount of information retained from post- to sleeper test
   a. Treatment B appears to be the most successful at all levels.
   b. In Community 2, however, the lower third was equally successful in Treatment C.

Summary Table of Indicative Trends

| | Pre-to Post-Test | | Post- to Sleeper Test | |
|---|---|---|---|---|
| | Community 1 | Community 2 | Community 1 | Community 2 |
| Upper Third | A | C | B | B |
| Middle Third | B | C | B | B |
| Lower Third | C | C | B | B&C |

Letter-Treatment
A - transparencies
B - transparencies plus every-pupil response cards
C - self-directing, self-correcting worksheets

Each community made comparable progress when considering the gains made from pre-test to post-test. Therefore, one might postulate that those children from a more culturally limited environment progressed equally as well as those who have more enriched opportunities. The ability to learn multiple meaning conceptualization appears not to be dependent upon a socio-economic factor.

It is important to note that in both communities, since there was no significance among scores, and realizing the chance factor operating, one might suggest that within the given circumstances, students who worked in the large group achieved equally as well as those who worked in the small group with paired practice.

Evidence seems to indicate that children would respond positively to specific instruction in application of multiple meaning vocabulary.

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1. Berwick, Mildred M., "The Construction and Evaluation of Multi-Meaning Vocabulary Tests for Grades Four to Eight." Unpublished Doctoral Dissertation, Boston University, 1952.